Psychological Assessment
1992, Vol. 4, No. 4, 442–450

Copyright 1992 by the American Psychological Association, Inc.
1040-3590/92/$3.00

Development and Validation of the Preschool Socioaffective Profile

Peter J. La Frenière
University of Montréal
Montréal, Québec, Canada

Jean E. Dumas
Purdue University

France Capuano and Diane Dubeau
University of Montréal
Montréal, Québec, Canada

An analysis of the Preschool Socioaffective Profile (PSP) using a sample of 608 preschoolers revealed high internal consistency, interrater reliability, and stability for the 8 10-item scales and identified 3 coherent factors representing externalizing and internalizing behavior problems and social competence. Boys scored higher than girls on externalizing measures, but not on internalizing measures, which were largely orthogonal. PSP scores were correlated with Child Behavior Check List teacher ratings, and each scale was found to differentiate a clinical sample from the complete sample. Using a typological approach, the anxious–withdrawn group was found to be the least interactive with peers; the angry–aggressive group, the most interactive and most rejected; and the competent group, highest in sociometric status. Finally, substantial coherence was reported between laboratory observations of mother–child interaction and PSP classification.

The Preschool Socioaffective Profile (PSP) assesses characteristic patterns of affective expression, social competence, and adjustment difficulties of preschool children in interaction with peers and adults. The PSP was designed expressly for preschool teachers to enhance their understanding of the emotional and behavioral signals of adjustment difficulties to preschool life. Because many behavioral–emotional problems of early childhood are not often directly observed by psychiatrists or psychologists, it is important to obtain information from those people who observe children under conditions in which problems typically occur.

Our decision to create a new instrument was based on both clinical and research imperatives. From the standpoint of research potential, the PSP is intended to address an important issue in prospective longitudinal research of children at risk for later disorders. As research goals become more precise and investigators seek to understand both differential etiologies and sequelae of developmental disorders, greater precision, reliability, and discriminant validity will be required of measures used to evaluate various problem behaviors at various ages. Scales produced through factor-analytic techniques have inevitably yielded variables comprising unequal numbers of items, and quite different psychometric characteristics. Typically, a large first factor representing conduct disorder is found to be more internally consistent, reliable, and stable than a much smaller factor representing emotional disorder or anxiety (e.g., Behar & Stringfield, 1974; Hogan, Quay, Vaughn, & Shapiro, 1989). Subsequent comparisons demonstrating differences between scales in terms of etiological factors, temporal stability, or external correlates may be attributed to the initial differences in the psychometric characteristics of the scales rather than substantive differences in the phenomenon under investigation.

Our clinical objective is to describe behavioral tendencies for the purpose of socialization and education rather than classify children within diagnostic categories for the purpose of clinical intervention. One consequence of this orientation is our emphasis on assessing the overall quality of the child's adaptation, including social competence, allowing teachers to orient classroom intervention efforts toward the child's strengths as well as weaknesses. Second, this emphasis allows for more refined description of developmental deviance by focusing on the presence or absence of positive behavior as well as problem behavior. Finally, this focus may also enhance prediction of later disorders because early investigators have reported better prediction from "indices of competence and ego maturity rather than the absence of problems and symptoms as such" (Kohlberg, LaCrosse, & Ricks, 1972, p. 1274).

In summary, the PSP was designed to meet the following criteria: (a) It should provide a standardized description of behavior in context that is reliable, valid, and useful for preschool teachers; (b) it should attempt to differentiate specific types of problems, in addition to global assessments; (c) it should provide an assessment of children's positive social adaptation or

---

Funding was provided by the Social Sciences and Humanities Research Council of Canada, Grant 498-89-0028 and Fonds Pour la Formation de Chercheurs et l'Aide à la Recherche du Québec, Grant 90-ER-0168 to Peter J. La Frenière and Jean E. Dumas.

We thank our research assistants—in particular, Louise Beaudin, Catherine Gosselin, and Pierrette Verlaan—and the many devoted preschool teachers without whom this study would not have been possible.

A previous version of this article was presented at the Society for Research in Child Development Conference in April 1991.

Correspondence concerning this article should be addressed to Peter La Frenière, Ecole de Psycho-Education, 750 Boulevard Gouin East, Montréal, Québec, Canada H2C 1A6, or Jean E. Dumas, Department of Psychological Sciences, Purdue University, West Lafayette, Indiana 47907.

competence; (d) the measures derived from the instrument should yield variables of approximately equivalent internal consistency, reliability, and stability; and (e) measures should be sufficiently sensitive to behavioral change over time to evaluate short-term treatment outcomes.

Conceptual Basis, Structure, and Item Selection

We approached the task of constructing the PSP from a developmental-adaptational perspective, significantly influenced by ethologists and other social scientists who have emphasized the functional significance of affect in regulating social exchange (Bowlby, 1980; Ekman, 1984; Izard, 1977; Plutchik, 1980). From this perspective, emotions signal needs, attitudes, anticipations, and impulses toward action. Discrete, primary emotions, such as joy, love, anger, fear, and sadness, are evident in infancy and generally shared across cultures. They are widely recognized, not just as common verbal labels for emotional experience, but as core species-specific motivational systems that shape or organize both behavior and development across the life span (Fischer, Shaver, & Carnochan, 1990; Sroufe, 1979). Among preschool children, the expression of positive affect is associated with peer acceptance, leadership, and positive evaluations of social competence by teachers (La Frenière & Sroufe, 1985). Although negative affective displays may also be adaptive as social signals (Sroufe, Schork, Motti, Lawroski, & La Frenière, 1984), generalized and chronic anger, hostility, sadness, or anxiety more often indicate a poor quality of adaptation.

On the basis of this previous research, the target behaviors for the new instrument included emotional expression in social interaction with peers and adults, as well as expressions of characteristic emotion in a nonsocial context. Eight dimensions were identified as central to the quality of the child's adaptation to the preschool or daycare environment. For each of these dimensions, 10 items were written, 5 describing successful adjustment and 5 describing adjustment difficulties. Within the realm of emotional expression, unrelated to a specific interpersonal context, three scales were developed, defined by positive and negative poles: Joyful–Depressive, Secure–Anxious, and Tolerant–Angry. Likewise, three scales were developed to describe peer relations: Integrated–Isolated, Calm–Aggressive, and Prosocial–Egotistical. Finally, two scales were developed for assessing teacher–child relations: Cooperative–Oppositional and Autonomous–Dependent.

An initial pool of 80 items was pretested on a sample of 140 preschool children who ranged in age from 30 to 66 months (La Frenière, Dubeau, Janosz, & Capuano, 1990). Teachers made full use of the 6-point Likert scale on most items, with the exception of the items reflecting more severe disturbances (e.g., *takes pleasure in harming others*). Teacher evaluations were normally distributed for social competence items and positively skewed for emotional–behavioral problems. Variation was approximately equivalent across all eight scales.

Each of the eight scales clearly differentiated clinical from nonclinical samples, which must be considered a low hurdle in the validation process because our objective was to create an instrument sensitive to individual differences and behavioral change over time in a normal population. Nevertheless, this analysis establishes the first and most fundamental claim of validity: identifying the developmentally deviant child. Although all eight scales differentiated the two groups, it is interesting to note that among the broad band measures, the clinical group could best be identified by noting the relative absence of age-appropriate behaviors in the competence domain. On the basis of this pilot study's results, items were selectively revised to increase the interrater reliability and internal consistency of the scales while keeping the initial structure of the instrument intact.

Study 1

Method

Subjects. The sample consisted of 608 preschool children (282 girls, 326 boys) of French-Canadian background, recruited from 60 different preschool classrooms from the Montréal metropolitan area. Children ranged in age from 28 to 76 months at the start of data collection: The mean age of the girls was 49.3 months ($SD = 10.7$); that of the boys was 49.9 months ($SD = 10.4$).

Teacher evaluations. The children were evaluated by their two classroom teachers near the end of the fall session using the Preschool Socioaffective Profile (PSP). All children whose parents consented to their participation (70%) and who had been enrolled in the daycare for at least 2 months were evaluated. To provide a basis for concurrent validation of the PSP, the Child Behavior Checklist (CBCL; Edelbrock & Achenbach, 1984) was completed by teachers of 177 of the original 608 children. In these cases, parents had agreed to participate in a more detailed study. The Teacher Report Form (TRF) of the CBCL was chosen because of its reliability, validity, and widespread usage in research with school children. It consists of 20 social competence items and 118 behavior problem items, evaluated according to a 3-point scale. Because of the nature of the competence items (e.g., related to sports, hobbies, and clubs), this portion of the questionnaire was not scored by the preschool teachers. The 118 behavior problem items were scored using the norms for 6- to 11-year-olds because we wished to compare instruments appropriate for use by teachers. (Norms for 4- to 5-year-olds are available for the parental version only.)

Results

The *Results* section is organized with respect to the following topics: (a) reliability, internal consistency, and stability of the PSP; (b) factor structure; (c) effects of age, sex, and socioeconomic status (SES); and (d) concurrent validation vis-à-vis the CBCL.

Reliability, consistency, and stability of the PSP. Interrater reliability was calculated for each of the eight PSP scales using Spearman-Brown estimates based on correlations averaged across all classrooms combined. These reliability estimates were uniformly high, ranging from .72 to .89 as shown in Table 1. In addition, the internal consistency of each scale was assessed by Cronbach's alpha. Again the scales were all highly consistent, with scores ranging from .79 to .91.

Data on test–retest reliability are based on a subsample of 29 subjects who were selected at random and reevaluated by their teachers 2 weeks after the initial evaluation. Pearson correlations for the eight scales ranged from .74 to .87, whereas the scores, which are based on a larger pool of items, were slightly higher, ranging from .78 to .93.

Factor structure. On the basis of their high internal consis-

Table 1
Interrater Reliability, Internal Consistency, and Temporal Stability of Preschool Socioaffective Profile Scales

Scales	Interrater reliability	Cronbach's alpha	2-week stability
Depressive–Joyful	.84	.87	.80
Anxious–Secure	.85	.84	.76
Angry–Tolerant	.85	.89	.74
Isolated–Integrated	.89	.91	.87
Aggressive–Calm	.82	.89	.87
Egotistical–Prosocial	.72	.84	.83
Oppositional–Cooperative	.73	.85	.85
Dependent–Autonomous	.82	.79	.78

Table 3
Sex Differences in Preschool Socioaffective Profile Scales and Scores

	Girls (n = 282)		Boys (n = 326)		
Measure	*M*	*SD*	*M*	*SD*	*t*
Scales					
Depressive–Joyful	2.41	1.3	2.10	1.3	2.90
Anxious–Secure	2.33	1.2	1.96	1.3	3.56*
Isolated–Integrated	2.08	1.4	1.97	1.4	0.91
Dependent–Autonomous	1.56	1.3	1.32	1.4	2.21
Angry–Tolerant	1.26	1.6	0.72	1.6	4.08*
Aggressive–Calm	2.08	1.4	1.22	1.5	7.34*
Egotistical–Prosocial	1.21	1.4	0.53	1.3	6.11*
Oppositional–Cooperative	2.52	1.3	1.96	1.4	5.03*
Scores					
Externalizing Behavior	2.15	0.7	2.44	0.8	4.83*
Social Competence	4.04	0.6	3.76	0.7	5.33*
General Adaptation	1.93	1.0	1.48	1.0	5.50*

* $p < .001$.

tency, item-clusters (clusters of 5 positive or negative items associated with each scale) were selected as variables for a principal-components analysis, using varimax rotation procedures. This analysis confirmed the underlying structure of the PSP, yielding three principal factors, which accounted for 67.1% of the total variance. As shown in Table 2, the first factor, designated *Social Competence,* comprised the eight positive item-clusters, with factor loadings ranging from .58 to .81. The second factor, labeled *Externalizing Behavior,* comprised four negative item-clusters (angry, aggressive, egotistical, oppositional), with loadings ranging from .83 to .89. Finally, the third factor, *Internalizing Behavior,* comprised the remaining four negative item-clusters (depressed, anxious, isolated, dependent), with loadings ranging from .75 to .84.

Effects of gender, age, and SES. Sex differences were assessed for the eight PSP scales and the three factors mentioned above, and for a global score comprising all 80 items, labeled *General Adaptation.* Because multiple *t* tests (12) were conducted, Bonferroni corrections were applied, shifting the alpha level from .05 to .004.

As shown in Table 3, boys were assessed more negatively than girls for Externalizing Behavior (and each of the four scales associated with this factor), Social Competence, and General Adaptation. Boys were also assessed as being more anxious than their female peers, though no significant differences were found for the Joyful–Depressive, Integrated–Isolated, or Autonomous–Dependent scales, nor for the Internalizing factor itself.

Table 2
Factor Structure of the Preshool Socioaffective Profile

Item clusters	Factor 1	Factor 2	Factor 3
Factor 1			
Joyful	.71	—	−.53
Secure	.64	—	−.61
Integrated	.68	—	−.56
Autonomous	.58	—	−.60
Tolerant	.71	−.55	—
Calm	.77	−.49	—
Prosocial	.81	−.39	—
Cooperative	.77	−.43	—
Factor 2			
Angry	—	.86	—
Aggressive	—	.83	—
Egotistical	—	.89	—
Oppositional	—	.83	—
Factor 3			
Depressive	—	—	.82
Anxious	—	—	.84
Isolated	—	—	.75
Dependent	—	.32	.75

Pearson correlations between age and PSP measures were computed for the total sample and for boys and girls separately. No sex differences in these correlations were evident. For the sample as a whole, correlations with age varied from .07 to .16 across the eight scales. As expected, age was most highly correlated with the social competence index (r = .20, df = 604, $p <$ .001) but was unrelated to internalizing (r = −.07) or externalizing behavior (r = .01). Considering that age explained between 0 and 4% of the total variance of the different PSP variables, separate age norms for preschoolers were deemed unnecessary when the age limits (30 to 76 months) of the instrument are respected. As other investigators have noted, teachers tend to evaluate each child with reference to his or her age group, thus minimizing the impact of this variable in preschool groups of children of similar age (Behar & Stringfield, 1974).

A composite score of SES indicators was derived by averaging the standardized scores for family income, parental education, and occupational prestige. This SES variable was found to be modestly correlated with PSP assessments, with the exception of Externalizing Behavior problems. Significant negative correlations were obtained for both Internalizing Behavior problems and Social Competence, with correlations for boys slightly higher than those of girls, though the latter difference was not significant. As expected, children from disadvantaged families showed somewhat more adjustment problems and less social competence than did peers from more affluent families.

Concurrent validation: Comparison of the PSP with the CBCL. Pearson correlations were computed for groups of boys and girls separately in order to compare both narrow- and broadband indexes of the two instruments. A summary of these analyses is shown in Table 4. No significant sex differ-

Table 4
Correlations Between Profile Socioaffective Profile (PSP) and Child Behavior Checklist (CBCL) Measures for Boys and Girls

PSP/CBCL	Anxiety	Withdrawal	Aggression	Internalizing	Externalizing
Anxious					
Boys	.48***	.48***	.01	.52***	.15
Girls	.40***	.37***	.10	.43***	.19*
Isolated					
Boys	.51***	.58***	−.11	.59***	.03
Girls	.30**	.53***	−.01	.47***	.09
Aggressive					
Boys	−.12	−.10	.53***	−.11	.49***
Girls	−.01	−.08	.63***	−.04	.61***
Internalizing Behavior					
Boys	.57***	.60***	.13	.63***	.27**
Girls	.50***	.45***	.20*	.53***	.29**
Externalizing Behavior					
Boys	.00	−.07	.68***	−.03	.64***
Girls	−.03	−.20*	.71***	.12	.66***

* $p < .05$. ** $p < .01$. *** $p < .001$.

ences in correlations were obtained. A slightly higher degree of convergence was expected and obtained for Externalizing Behaviors, though this difference was slight when considering broadband measures. Among the three comparable narrowband measures, Anxiety was the least convergent and presumably the most difficult dimension to reliably assess by teacher evaluations. One important difference between the pairs of broadband indexes concerns the degree of association between the two conceptually distinct constructs. As assessed by the CBCL, Externalizing and Internalizing problems tended to cooccur to a considerable extent, as reflected by a .60 correlation between the two measures. This aspect of the CBCL hinders developmental research designed to address questions of specific etiologies or consequences of these broadband disorders. In contrast, PSP measures of Internalizing and Externalizing behaviors were more orthogonal, $r = .28$, a difference that is statistically significant ($z = 5.33$, $df = 174$, $p < .001$).

Discussion

In this study, data were reported concerning the reliability and concurrent validity of the PSP. These initial results, although preliminary, are promising in both respects. Because revision of the PSP pilot items was based on their contribution to the internal consistency of their corresponding scale, it is not surprising that all eight scales show high internal consistency. Scales were balanced for positive (competence) and negative (emotional or behavior problems) items and covered an extensive array of typical behaviors within a preschool setting. A factor analysis clearly identified three factors: Social Competence, Externalizing Behavior, and Internalizing Behavior. The Social Competence factor comprises a broad range of items designed to assess the positive qualities of the child's adaptation rather than specific behavioral competencies. As a developmental construct, social competence refers to behaviors that indicate a well-adjusted, flexible, emotionally mature, and generally prosocial pattern of adaptation. Such children score high on assessments of ego resiliency, are well liked and sought out by their peers, and are appreciated by their teachers (La Frenière & Sroufe, 1985; Waters & Sroufe, 1983). The four item-clusters composing the second factor may be considered the preschool equivalent of previous broadband syndromes labeled variously as *conduct disorder* (Peterson, 1961; Quay, 1983) or *externalizing symptoms* (Achenbach & Edelbrock, 1981) and comprised items measuring angry, aggressive, selfish, and oppositional behaviors. The third factor is also composed of four item-clusters, comprising items measuring anxious, depressed, isolated, and overly dependent behavior. It is similar to previous broadband indexes labeled *affective disorder* or *internalizing symptoms.* This initial division between two broad types of disorder has been extensively verified for children in early and middle childhood and adolescence (Achenbach & Edelbrock, 1981; Behar & Stringfield, 1974; Kohn & Rossman, 1972; Peterson, 1961; Quay, 1983).

The hierarchical organization of the eight scales and the positive and negative valences embedded within each provide a flexible range of scores. The level of analysis that is most appropriate to the purpose at hand may be selected from the narrowband profile of eight 10-item scales to the broadband measures of Social Competence (40 items), Internalizing Problems (20 items), Externalizing Problems, (20 items), and a Global score reflecting the child's quality of adaptation to the preschool environment (all 80 items).

As predicted, sex differences were striking for all externalizing dimensions but not for internalizing problems—with one exception. Boys were rated as more anxious than their female peers by their preschool teachers. This result suggests future lines of inquiry into the factors underlying the emergence of externalizing behavior problems in boys during the preschool period. Rather than viewing anxiety as a narrow-band component of the internalizing syndrome, anxiety may be an underlying component of both externalizing and internalizing problems in young children. Our current longitudinal research addresses this question concerning the role of early anxiety in the etiology of sexually differentiated expressions of child psychopathology.

Concurrent validity for the PSP must also be established by a direct comparison with previously validated instruments. Moderate convergence between the PSP and the CBCL for narrowband and broadband measures has been demonstrated. We view this as an optimal result because lower correlations would raise legitimate questions of potential validity, whereas a pattern of correlations that is too high would undermine the rationale for a new instrument. We also view the significantly greater orthogonality of the PSP assessments of externalizing and internalizing behaviors as optimal for current research in developmental psychopathology investigating specific etiologies and sequelae of early patterns of disorder.

Study 2

To further establish the construct validity of the PSP, additional validation criteria were studied using a typological approach. Two external criteria were selected to provide dependent variables: direct observation of social participation and peer sociometrics. Although the former is mute with respect to the quality of peer behavior, it was selected to provide an objective, quantitative index of social withdrawal, hypothesized to differentitate angry–aggressive and anxious–withdrawn groups. Because of its external correlates indicating positive adaptation and independence, solitary play was not included in the index of passive withdrawal. Peer sociometrics were chosen to provide an intersubjective, qualitative index. Peer acceptance was hypothesized to differentiate the competent group from all other groups, whereas peer rejection was hypothesized to differentiate the angry–aggressive group from all other groups.

Construct validity of the PSP was further investigated by laboratory assessments of mother–child interaction in a problem-solving situation. We hypothesized that anxiety and withdrawal would interfere with the development and deployment of metacognitive skills, including the planning, monitoring, and outcome-checking skills involved in joint problem-solving. Specifically, we hypothesized that mothers of competent children, but not anxious children, would be more supportive and encouraging of their child's efforts to solve the problem. We also hypothesized that anxious–withdrawn children would be less likely to persist and more easily frustrated in their problem-solving attempts, and would be more likely to display negative affect and behaviors than the average or competent groups.

Method

Subjects. A random-stratified sample of 107 children was drawn from an initial sample of 608 preschool children of French-Canadian background recruited from 60 different preschool classrooms from the Montréal metropolitan area. This sample was selected on the basis of PSP scores derived from teacher evaluations as described below. Children (57 girls, 49 boys) ranged in age from 31 to 73 months at the start of data collection: The mean age of the girls was 49.3 months (*SD* = 10.9); that of the boys was 48.7 months (*SD* = 9.9).

Teacher evaluations. The children were evaluated by their two classroom teachers near the end of the fall session using the PSP. All children whose parents consented to their participation (70%) and who had been enrolled in the daycare for at least 2 months were evaluated. Children were selected for participation in the larger study on the basis of their PSP classification. Children were classified as socially competent (S–C), angry–aggressive (A–A), or anxious–withdrawn (A–W) using standardized (*Z*) scores calculated for boys and girls separately. These groups were formed using cutoff points of 1.0 *SD* for each of the three factors, with the further criterion of a minimal difference of 0.5 *SD* between scores for A–A and A–W. Finally, children whose scores were within 0.5 *SD* of the mean on all three scales were designated average (AV).

Peer sociometrics. Near the end of the fall or winter sessions, each child was administered a picture-sociometric interview. The interviews were conducted by the two classroom observers at the conclusion of the 1-month observational period. Each child began the interview by naming all of the children's photographs and then making three positive nominations, followed by a maximum of three negative nominations. The number of positive and negative nominations received by each child was then divided by the number of potential nominators, correcting for variations in group size.

Direct observation. Children were observed by teams composed of two different observers using a modified version of Parten's classification of social participation. An average of 50 focal-child 1-min time samples were collected on the participating children during periods of free play over a 1-month period. The predominant behavior occurring during the 1-min observational period was coded by the observer, who observed the children in the group in rotation. For the purposes of the present study, categories of noninteraction (unoccupied, onlooker, and parallel play) were combined. Solitary play was not included in this global category of noninteraction, because of its generally positive external correlates (Provost & La Frenière, 1991; Roper & Hinde, 1978). A team of six observers was trained to a criterion of 80% agreement and periodically retested throughout the period of data collection. Because only one observer at a time was permitted to enter the classroom, only those observers who maintained a minimum of 80% agreement on videotaped free play were responsible for the data collection. Their reliability, as assessed by the average correlation between all pairs of observers across all teams, was .78, $p < .001$.

Laboratory procedure. The mother–child dyads were greeted by research assistants on arrival and escorted to the laboratory testing room, where the "grocery store task," a paradigm recently developed by Gauvin and Rogoff (1989) and adapted by us for use with preschool children, was explained to them. The task consists of planning an efficient route through a miniature grocery store laid out as a board game on a surface of 71 × 61 cm. In the grocery store, 57 items are arranged on shelves on each side of three rows and along the inside of the four outer walls. On these 10 shelves are arranged miniature grocery items grouped according to the following categories: vegetables (5 items), fruit (6 items), meats (7 items), milk products (9 items), candy (4 items), baked goods (7 items), toiletries (10 items), and small jars and canned goods (9 items). After explaining the task to the child and the mother, the child was given a practice list of three items and asked to move a toy shopper through the grocery store to pick up the items on the list using the shortest possible route. Following the practice session, the experimenter made any necessary corrections and offered further explanations as needed. After assuring that the child (and mother) understood the game, the experimenter presented the child with a different list of five items each on five separate trials but made no further interventions except to verify the child's recognition of the five items drawn on cards composing each "shopping list." After each list was completed, the children checked out their groceries using a Fisher-Price toy register. Mothers were instructed to assist the child as needed in the completion of the game for the first three shopping lists. After three lists were completed (or in some cases, after 18 min, even if the lists were not completed), the mother was asked to complete a task on an adjacent computer. The child continued the grocery store task alone with the understanding that at any time the mother could assist the child or the child could ask for help as needed. In general, children found the task entertaining and shopped enthusiastically.

Laboratory observations. Mother–child interactions during the grocery store task were videotaped through a one-way mirror and later coded with the INTERACT coding system, a real-time microcomputer coding system (Dumas, 1987). The systems consist of five categories of codes (actor, behavior, setting, adverb, and valences) that are combined to form discrete observation strings. Following each observation, all raw data were stored on a desktop computer for later clean up, verification, and analysis.

For the purpose of this study, individual behavior codes were collapsed to form clusters of mother and child behaviors: (a) *positive* behavior, which consisted of laughter, helping, approving, and affectionate behavior; (b) *negative* behavior, which consisted of critical, punishing, disapproving, or aggressive behavior; (c) *controlling* behavior, which consisted of commands and physical intrusions; (d) *positive affect,* which consisted of the expression of positive emotions (e.g., smiling) that accompanied any coded behavior; and (e) *negative affect,* which consisted of the expression of aversive emotions (e.g., loud or sarcastic tone of voice) that accompanied any coded behavior. Each cluster was then calculated separately for mother and child.

The reliability of the coding categories was assessed by requiring two graduate students to code 75% of the observations simultaneously but independently. Cohen's kappa was subsequently computed for each of the clusters described above. Results show that interobserver agreement (corrected for chance agreement) averaged .89 for behavior clusters and .70 for affective clusters.

Results

Using the PSP classification system, one-way analyses of variance (ANOVAs) for the four comparison groups (socially competent, average, angry–aggressive, and anxious–withdrawn) were computed for the dependent variables described above, with appropriate contrasts for group comparisons. These results are organized according to the following sets of dependent variables: (a) naturalistic observation of passive withdrawal, (b) sociometric assessments of peer acceptance and peer rejection; (c) laboratory observation of children's positive and negative affect and behavior; and (d) laboratory observation of mothers' positive and negative affect and behavior.

As predicted, the anxious–withdrawn (A–W) group spent the most time in noninteraction (34%) compared with 18% for the angry–aggressive group (A–A), a difference that was statistically significant, $F(3,97) = 4.79$, $p < .01$. In addition, the A–W group was significantly less interactive than both the SC (24%) and AV (25%) groups ($p < .05$).

The overall ANOVA for peer acceptance was not significant, $F(3,173) = 1.93$, $p = .128$. Only the a priori contrast between SC (60%) and A–A (38%) was significant ($p < .05$). One probable reason for the lack of discrimination for this variable is the relatively small size of the classroom groups. Because of the well-known tendency for young children to nominate same-sex classmates as preferred partners, most children received nominations from nearly all of their same-sex peers. In contrast, the average percentage of negative nominations received is less than half as great because, for ethical reasons, we did not insist on three negative nominations. As a result, the one-way ANOVA for peer rejection is more discriminating, $F(3, 173) = 6.83$, $p < .001$, with A–A significantly higher (30%) and SC (13%) significantly lower than the two intermediate groups (A–W, 22%; AV, 23%).

As shown in Table 5, PSP classification was strongly predictive of the child's affective expression when collaborating with the mother on the grocery store task but less predictive of behavioral measures. Significant group differences were obtained for child positive and negative affect, and controlling behaviors. Subsequently, appropriate a priori contrasts were calculated. As expected, the S–C group expressed significantly more positive affect during the task than did all other groups ($p < .05$). The A–W group expressed significantly more negative affect than did all other groups ($p < .05$) and behaved in a more controlling fashion toward their mothers than did either the SC or AV groups ($p < .05$).

Similar analyses of maternal behavior revealed even more pronounced group differences, as shown in Table 6. Mothers of the SC group engaged in significantly more positive behaviors than did those in all other groups ($p < .05$) and were more expressive of positive affect than was the AV group ($p < .05$). In stark contrast, mothers of the A–W group expressed significantly more negative affect ($p < .05$) and were significantly more controlling of their child than were those in all other groups ($p < .05$). In addition, these mothers directed significantly more negative behaviors to their child than did the SC or AV groups ($p < .05$). It is not surprising that the expression of negative affect was relatively rare or completely absent during the grocery game for most mothers and children. However, A–W children and their mothers expressed four and six times more negative affect, respectively, than did those in all other groups.

Discussion

In Study 2 the PSP was used to recruit a stratified random subsample of the initial sample for more extensive testing. Two well-known and methodologically independent assessments were chosen as validation criteria: observation of social participation and peer sociometrics. These external criteria provide further evidence of construct validity of the PSP; it is also important that they clearly differentiated the anxious–withdrawn

Table 5
Child Affect and Behavior in the Laboratory Situation as a Function of Preschool Socioaffective Profile Classification

	PSP classification				
Behavior	SC	AV	A-A	A-W	$F(3, 103)$
Positive affect	.15	.03	.05	.02	6.42**
Positive behavior	.12	.16	.06	.08	2.49
Negative affect	.04	.02	.03	.13	5.07**
Negative behavior	.08	.08	.04	.10	0.86
Controlling behavior	.07	.08	.12	.18	2.89*

Note. SC = socially competent; AV = average; A-A = angry–aggressive; A-W = anxious–withdrawn.
* $p < .05$. ** $p < .01$.

Table 6
Maternal Affect and Behavior in the Laboratory Situation as a Function of Child's Preschool Socioaffective Profile (PSP) Classification

	PSP classification				
Behavior	SC	AV	A-A	A-W	$F(3, 103)$
Positive affect	.15	.04	.10	.07	2.94*
Positive behavior	.15	.10	.10	.07	4.12**
Negative affect	.01	.02	.03	.12	6.93**
Negative Behavior	.01	.02	.02	.04	3.01**
Controlling behavior	.14	.20	.20	.33	8.93**

Note. SC = socially competent; AV = average; A-A = angry–aggressive; A-W = anxious–withdrawn.
* $p < .05$. ** $p < .01$.

and angry–aggressive groups. As predicted, the anxious–withdrawn group was observed to be significantly less interactive than all other groups, though not necessarily neglected or rejected by their peers. More than those in all other groups, they spent time in activities on the periphery of group life, such as onlooking and parallel play, and were also more prone to be alone and unoccupied. It is significant that their anxiety was not expressed through solitary play, which might be more aptly named *independent play,* because this behavior seems reflective of positive qualities distinct from social withdrawal (Roper & Hinde, 1978).

In contrast, the angry–aggressive group was the most interactive with peers and also the most rejected. These results correspond precisely with theoretical and empirical expectations. Because high aggression and hyperactivity co-occur in young children, particularly boys, factor-analytic studies often result in a single large factor, Aggressive–Hyperactive, rather than two distinct factors (e.g., Behar & Stringfield, 1974). In addition, aggression is one of the principal correlates of rejection in the preschool peer group (La Frenière & Sroufe, 1985).

The socially competent group received the most positive nominations and the least negative nominations, and was significantly higher in sociometric status (positive minus negative nominations) than all other groups. Because of its qualitative dimension, sociometric status is one of the most robust correlates of teacher ratings of social competence in preschoolers (La Frenière & Sroufe, 1985). Regarding sociometric status, the average group represented an intermediate point between the socially competent and the angry–aggressive groups. Together, this pattern of results provides a sound basis for continuing to refine the PSP and extending the validation process.

General Discussion

These initial analyses of the PSP demonstrated high internal consistency, reliability, and stability of PSP scales and identified three coherent factors representing externalizing and internalizing behavior problems and social competence. Concurrent validation of the PSP is established by substantial correlations with CBCL–TRF ratings and the ability of each scale to differentiate a smaller clinical sample from the complete sample. Construct validity was further demonstrated with respect to classroom social participation and peer sociometrics using a typological approach. The anxious–withdrawn group was found to be the least interactive with peers, and the angry–aggressive group, the most interactive and most rejected; the socially competent group was highest in sociometric status. Moreover, the externalizing and internalizing dimensions were largely orthogonal, with boys scoring higher than girls on externalizing but not internalizing measures.

In addition to the issues of reliability and validity, substantive issues were addressed concerning the consistency of behavior problems in the family and daycare settings and the conjunction of mother–child and peer relations. In a dyadic problem-solving game situation, mothers of anxious–withdrawn children expressed more negative affect and behaved in a more negative, controlling manner than did mothers of all other groups. Reciprocally, anxious–withdrawn children expressed more negative affect and engaged their mothers in a battle for control of the game more often than did those in all other groups. In contrast, socially competent children were found to express more positive affect in the grocery store task and their mothers engaged in more positive, supportive behavior than did those in all other groups, expressing more positive affect than shown by the mothers of those in the normative group. From a developmental perspective, these results suggest that affective dimensions of early childhood are coherent between the child's life in the family and the daycare, and that unresolved issues of anxiety–security covary with difficulty in resolving issues of autonomy and will within the mother–child dyad and beyond it.

In conclusion, although these results do not terminate the validation process, they do serve to extend it, particularly with respect to measures of early anxiety and social competence. In future work we plan to continue this process of validation in reference to variables in the cognitive domain that are not hypothesized to relate to PSP variables and to expand the nomological network of social competence as a developmental construct. Longitudinal data that are at present being collected and analyzed will be used to respond to fundamental questions concerning the stability of early measures of competence and behavioral problems. Finally, we are currently exploring the validity and utility of a short form of the PSP for use with extensive samples. This work involves the application of the instrument to a sample of American children, for which separate norms will be developed if necessary.

Clinical Applications

The PSP is intended to assist teachers in their understanding of the strengths and weaknesses of a child's social adaptation to the preschool milieu and to empower them in their efforts to provide timely, developmentally sensitive care in their classroom. As with most instruments of this genre, at no time should the PSP be used as the sole basis for any clinical decision regarding intervention with the child. Rather, interpretations based on the profile should be viewed as hypotheses that require further corroboration from other data sources and the exercise of sound professional judgment. It is certainly not our intention that the PSP be used to label children or as the basis for their removal from their group. In our view, no instrument should serve this function at the preschool level.

Because of the level of behavioral specificity of the items and the greater number of scale points, teachers' descriptions rely on careful, accurate, and extensive observation of the child's behavior within the preschool setting. That the quality of the teacher's observation is the key to description and evaluation cannot be overstressed. It has been our practice to provide teachers with the list of items in order to become familiar with the relevant concepts and behavioral descriptors encoded within the instrument. This permits teachers to target specific behaviors of interest and to standardize to some extent the quality of observation across different teachers prior to evaluation. In addition, teachers should not attempt to use the instrument to describe the behavior of children who have recently arrived (less than 2 months) or who participate in the program on a very limited basis (2 days per week or less). These constraints are suggested for two reasons. First, most children need a period of time to adjust to a new setting or new group of peers. Research has shown that expressive and social behavior of preschool children undergoes significant change over the first month after entering a new group (McGrew, 1972). Second, our own research has shown that teachers need time to observe the child in a variety of situations before they begin to converge in their independent descriptions of an individual child. This is particularly true for teachers who begin the fall with a large group of new faces. In such instances we typically allow 3 months before asking teachers to provide a description based on the PSP. Finally, because of the complexity of computerized scoring of the PSP, as well as our own need to develop norms based on large numbers of children, we request that those who wish to make use of this instrument contact us for further information.

References

Achenbach, T. M., & Edelbrock, C. S. (1981). Behavioral problems and competencies reported by parents of normal and disturbed children aged four through sixteen. *Monographs of the Society for Research in Child Development, 46* (no. 1).

Behar, L., & Stringfield, S. (1974). A behavior rating scale for the preschool child. *Developmental Psychology, 10,* 601–610.

Bowlby, J. (1980). *Attachment and loss. Vol. 3: Loss.* New York: Basic Books.

Dumas, J. E. (1987). Interact: A computer-based coding and data management system to assess family interactions. *Advances in Behavioral Assessment of Children and Families, 3,* 177–202.

Edelbrock, C., & Achenbach, T. M. (1984). The teacher version of the child behavior profile: I. Boys aged 6–11. *Journal of Consulting and Clinical Child Psychology, 52,* 207–217.

Ekman, P. (1984). Expression and the nature of emotion. In K. R. Scherer & P. Ekman (Eds.), *Approaches to emotion* (pp. 319–344). Hillsdale, NJ: Erlbaum.

Fischer, K. W., Shaver, P. R., & Carnochan, P. (1990). How emotions develop and how they organise development. *Cognition and Emotion, 4*(2), 81–127.

Gauvin, M., & Rogoff, B. (1989). Collaborative problem solving and children's planning skills. *Developmental Psychology, 25,* 139–151.

Hogan, A. E., Quay, H. C., Vaughn, S., & Shapiro, S. K. (1989). Revised Behavior Problem Checklist: Stability, prevalence, and incidence of behavior problems in kindergarten and first-grade children. *Psychological Assessment, 1,* 103–111.

Izard, C. E. (1977). *Human emotions.* New York: Plenum Press.

Kohn, M., & Rossman, B. L. (1972). A social competence scale and symptom checklist for the preschool child: Factor dimensions, their cross-instrument generality, and longitudinal persistence. *Developmental Psychology, 6,* 430–444.

Kohlberg, L., LaCrosse, J., & Ricks, D. (1972). The predictability of adult mental health from childhood behavior. In B. B. Wolman (Ed.), *Manual of Child Psychopathology.* New York: McGraw-Hill.

La Frenière, P. J., Dubeau, D., Janosz, M., & Capuano, F. (1990). Profil socio-affectif de l'enfant d'âge préscolaire [Socio-affective profile of preschool children]. *Revue Canadienne dePsycho-Education, 19*(1), 23–41.

La Frenière, P. J., & Sroufe, L. A. (1985). Profiles of peer competence in the preschool: Interrelations between measures, influence of social ecology, and relation to attachment history. *Developmental Psychology, 21,* 56–69.

McGrew, W. C. (1972). *An ethological study of children's behavior.* New York: Academic Press.

Peterson, D. R. (1961). Behavior problems of middle childhood. *Journal of Consulting Psychology, 25,* 205–209.

Plutchik, R. (1980). *Emotion: A psychoevolutionary synthesis.* New York: Harper & Row.

Provost, M., & La Frenière, P. J. (1991). Social participation and peer competence in preschool children: Evidence for discriminant and convergent validity. *Child Study Journal, 21*(1), 57–72.

Quay, H. C. (1983). A dimensional approach to behavior disorder: The revised Behavior Problem Checklist. *School Psychology Review, 12,* 244–249.

Roper, R., & Hinde, R. A. (1978). Social behavior in a play group: Consistency and complexity. *Child Development, 49,* 570–579.

Sroufe, L. A. (1979). Socioemotional development. In J. Osofsky (Ed.), *Handbook of infant development* (pp. 462–515). New York: Wiley.

Sroufe, L. A., Schork, E., Motti, F., Lawroski, N., & La Frenière, P. J. (1984). The role of affect in social competence. In C. E. Izard, J. Kagan, & R. Zajonc (Eds.), *Emotions, cognition and behavior.* Cambridge, England: Cambridge University Press.

Waters, E., & Sroufe, L. A. (1983). A developmental perspective on competence. *Developmental Review, 3,* 79–97.

(*Appendix follows on next page*)

Appendix

Sample Items of the Preschool Socioaffective Profile

Social Competence

1. Negotiates solutions to conflicts with other children
2. Cooperates with other children in group activities
3. Comforts or assists another child in difficulty
4. Attentive towards younger children
5. Works easily in group

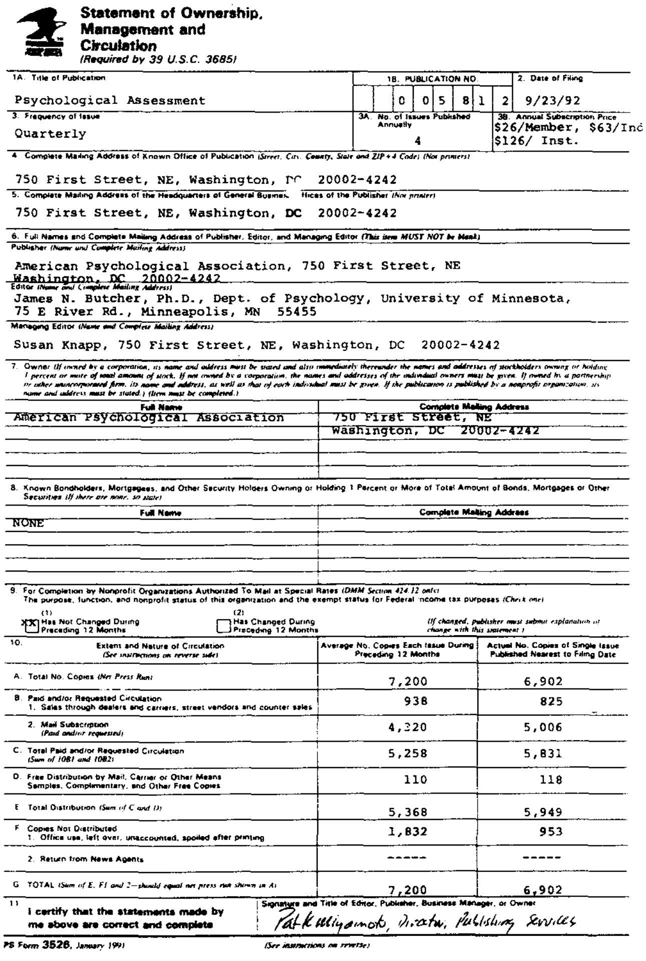
Anxiety–Withdrawal

1. Maintains neutral facial expression (does not smile or laugh)
2. Timid, afraid (e.g., avoids new situations)
3. Inhibited or uneasy in the group
4. Inactive, watches the other children play
5. Goes unnoticed in a group

Anger–Aggression

1. Gets angry when interrupted
2. Irritable, gets mad easily
3. Forces other children to do things they do not want to do
4. Opposes the teacher's suggestions
5. Defiant when reprimanded

Received May 21, 1991
Revision received February 4, 1992
Accepted February 19, 1992 ■



Statement of Ownership, Management and Circulation
(Required by 39 U.S.C. 3685)

1A. Title of Publication: Psychological Assessment
1B. PUBLICATION NO.: 0 0 5 8 1 2
2. Date of Filing: 9/23/92
3. Frequency of Issue: Quarterly
3A. No. of Issues Published Annually: 4
3B. Annual Subscription Price: $26/Member, $63/Ind $126/ Inst.
4. Complete Mailing Address of Known Office of Publication *(Street, City, County, State and ZIP+4 Code) (Not printers)*: 750 First Street, NE, Washington, DC 20002-4242
5. Complete Mailing Address of the Headquarters of General Business Offices of the Publisher *(Not printer)*: 750 First Street, NE, Washington, DC 20002-4242
6. Full Names and Complete Mailing Address of Publisher, Editor, and Managing Editor *(This item MUST NOT be blank)*
Publisher *(Name and Complete Mailing Address)*: American Psychological Association, 750 First Street, NE Washington, DC 20002-4242
Editor *(Name and Complete Mailing Address)*: James N. Butcher, Ph.D., Dept. of Psychology, University of Minnesota, 75 E River Rd., Minneapolis, MN 55455
Managing Editor *(Name and Complete Mailing Address)*: Susan Knapp, 750 First Street, NE, Washington, DC 20002-4242

7. Owner *(If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual must be given. If the publication is published by a nonprofit organization, its name and address must be stated.) (Item must be completed.)*

Full Name	Complete Mailing Address
American Psychological Association	750 First Street, NE Washington, DC 20002-4242

8. Known Bondholders, Mortgagees, and Other Security Holders Owning or Holding 1 Percent or More of Total Amount of Bonds, Mortgages or Other Securities *(If there are none, so state)*

Full Name	Complete Mailing Address
NONE	

9. For Completion by Nonprofit Organizations Authorized To Mail at Special Rates *(DMM Section 424.12 only)*
The purpose, function, and nonprofit status of this organization and the exempt status for Federal income tax purposes *(Check one)*
(1) ☒ Has Not Changed During Preceding 12 Months
(2) ☐ Has Changed During Preceding 12 Months
(If changed, publisher must submit explanation of change with this statement.)

10. Extent and Nature of Circulation *(See instructions on reverse side)*	Average No. Copies Each Issue During Preceding 12 Months	Actual No. Copies of Single Issue Published Nearest to Filing Date
A. Total No. Copies *(Net Press Run)*	7,200	6,902
B. Paid and/or Requested Circulation 1. Sales through dealers and carriers, street vendors and counter sales	938	825
2. Mail Subscription *(Paid and/or requested)*	4,320	5,006
C. Total Paid and/or Requested Circulation *(Sum of 10B1 and 10B2)*	5,258	5,831
D. Free Distribution by Mail, Carrier or Other Means Samples, Complimentary, and Other Free Copies	110	118
E. Total Distribution *(Sum of C and D)*	5,368	5,949
F. Copies Not Distributed 1. Office use, left over, unaccounted, spoiled after printing	1,832	953
2. Return from News Agents	-----	-----
G. TOTAL *(Sum of E, F1 and 2—should equal net press run shown in A)*	7,200	6,902

11. **I certify that the statements made by me above are correct and complete**
Signature and Title of Editor, Publisher, Business Manager, or Owner: Pat K. Miyamoto, Director, Publishing Services

PS Form 3526, January 1991 *(See instructions on reverse)*